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UNDER THE AUSPICES OF

SCIENTIFIC PROVIDER AND CONGRESS ORGANIZER:

2ⁿᵈ edition

ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

PRESIDENT OF THE CONFERENCE:

ARSELA PRELAJ

MILAN, ITALY
MAY10th 2024
& ONLINE

Fondazione IRCCS Istituto Nazionale dei Tumori

Sistema Socio Sanitario
Regione Lombardia

POLITECNICO MILANO 1863

PRESIDENT OF THE CONFERENCE

Arsela Prelaj, MD, PhD Candidate
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Leonardo Provenzano
Fondazione IRCCS Istituto Nazionale Tumori, Milan (Italy)

General Information

CONGRESS VENUE

Aula Magna, *Fondazione IRCCS Istituto Nazionale Tumori*
Via Giacomo Venezian, 1 20133 Milan (Italy)

VIRTUAL CONFERENCE

https://www.events-fad.com/

REGISTRATION

Registration is free of charge.
You may register for IN-PERSON OR ONLINE-ONLY ACCESS
www.events-communication.com/event/ai2024

OFFICIAL LANGUAGE AND TIME

The official language is English
The official Time is Central European Summer Time (CEST), UTC +2

CME CREDITS

CME accreditation (valid for Italian participants only) for:
PHYSICIAN, PHARMACIST, BIOLOGIST, NURSE
CME credits: tba
Italian CME credits will be granted to those participants who attend at least 90% of scientific works, fill in the questionnaire assessment of perceived quality and duly fill in the evaluation questionnaires answering correctly 75% of the questions.

Overview

AI methodologies have been applied to medical research for years, and have recently made an impactful entrance in oncology more specifically. AI broadly speaking consists in a set of techniques allowing computers to emulate human intelligence, employing algorithms created for the analyses and the design of either predictions or conclusions based on the analysis of big datasets.

The latter is especially important for cancer research considering the critical mass of data available for analysis and that standard analysis methods fail to exploit to its fullest potential. This is particularly the case for multiomics data, with their high variation in nature, format or storage.

The proper and effective and integration of these novel methodologies into the standards of clinical – but also basic and translational – research could prove to be an important leap forward for oncology research. Hence, this event will have two core training objectives.

The first will be to ease the clinical and research community into the field of AI methodologies themselves, still misunderstood or not known to its full potential – from a general overview of the most frequently used ML/DL methods and Explainable AI to a deep dive in novel data platforms and repository structures integrating these approaches in their design. This will allow clinicians to identify the value of AI models for their trials and studies, making the volume of patient- and tumor-related data valuable and more fully exploitable; as well as biologists to assess its potential in tumor biology to discover new biomarkers and mechanisms.

The second main endpoint will be to demonstrate not only the possibilities offered by the inclusion of AI models in standard practice, but really to present some concrete and innovative activities where they are already being successfully implemented. The focus is to demonstrate in particular the value of AI for both its predictive power and for the possibilities it opens up for the discovery of both new biomarkers and of new molecules targeting specific tumors. In particular, one section will be focused on the translational field and the synergy between AI-powered multiomic data analysis and clinical research, with regards to cancer

immunotherapy, for example metastatic lung cancer.
As the AI research field is evolving at a rapid pace, the event will be topped off by a session offering perspectives already going beyond the current state of the art and providing insights into the Artificial Intelligence of tomorrow – how it could be involved as full-fledged actor in clinical decision-making.

FORMAT

The event is set to be a full-day program. The speakers will have a diverse background to reflect the spectrum of Artificial Intelligence research (and beyond), from Artificial Intelligence engineering experts, to clinicians and translational researchers, and hybrid figures such as clinical Artificial Intelligence specialists. The attendance is expected to mirror this variety, along with participants with a more specific background in imaging and pathology.

CALL FOR ABSTRACT

The call for abstract is open, don't miss the opportunity to submit your paper!
The Scientific Committee welcomes the submission of abstracts.

TOPIC AREAS:
1. Cancer screening with AI
2. Image diagnosis (radiomics and/or digital pathology)
3. Multiomics and/or Multimodal Integration with AI
4. Treatment prediction and Selection with AI and explainability
5. Special Section (AI legal-ethical frameworks, Innovative platforms and Cognitive sensing and wearable devices)

SUBMISSION DEADLINES:
27th November 2023 open call
10th January 2024 submission deadline
15th February 2024 Outcome notifications

ONLINE SUBMISSIONS

Scientific Program

08:30 *POSTER SESSION*

09:30 Welcome and Introduction
Arsela Prelaj
Giovanni Apolone *Scientific Director Fondazione IRCCS Istituto Nazionale dei Tumori*
Filippo de Braud *Director Dpt. of Oncology and Hemato-Oncology, Fondazione IRCCS Istituto Nazionale dei Tumori*

session 1

BACKGROUND ON AI METHODOLOGIES AND THEIR USE IN THE CLINICAL PRACTICE
Chairs: **Francisco Sanchez Vega, Monica Ganzinelli, Francesco Trovo**

10:00 Machine, Deep Learning and Reinforcement Learning in medicine
Marcello Restelli

10:20 Explainable AI for RWD, genomics and gaps in images
Vanja Miskovic

10:40 Deep Learning applied to Genomics and Transcriptomics
Julien Vibert

11:00 Discussion

session 2

AI AND IMAGING: CLINICAL PRACTICE APPLICATION AND FUTURE DIRECTIONS
Chairs: **Andrea Spagnoletti, Alessandro Cicchetti, Giacomo Boracchi**

11:20 Integration of radiomics in clinical practice for screening and diagnosis
Mireia Crispin Ortuzar

11:40 The use of radiomics in prediction: treatment outcomes and toxicity
Raquel Pérez-Lopez

12:00 Integration of digital pathology in clinical practice for screening and diagnosis
Jakob Kather

12:20 The use of digital pathology in prediction: treatment outcomes and toxicity
Alex Pearson

12:40 Discussion

13:00 Lunch Break *POSTER SESSION*

session 3

AI FOR OMICS AND MULTIMODAL DATA ANALYSIS
Chairs: **Alessandra Pedrocchi, Arsela Prelaj, Luca Agnelli**

14:00 Multimodal integration: from methodology to its successful application
Sohrab Shah

14:20 Shared talk: Molecular Tumor Board and the role of AI: the oncologist and AI-expert point of view
Filippo de Braud, Verlingue Loic

14:45 Drug discovery using virtual AI lab - Special lecture
Marina Chiara Garassino

15:05 Discussion

session 4

DATA STORAGE AND ITS REGULATORY FRAMEWORK
Chairs: **Sokol Kosta, Emilia Ambrosini, Laura Mazzeo**

15:25 Bridging the Gap: Federated Learning as a Catalyst for Collaborative Development of AI Models
Daniel Truhn

15:45 Digital therapeutics: clinical applications in oncology
Eugenio Santoro

16:05 Balancing ethical and legal framework with the revolution of AI technologies
Elisabetta Biasin

16:25 Discussion

16:40 Coffee Break *POSTER SECTION*

session 5

SPECIAL SECTION AND PROJECTS
Chairs: **Giuseppe Lo Russo, Claudia Proto, Diego Signorelli**

17:20 Accelerating Clinical Trials with AI-powered medical platforms for personalised dosing and Digital Twins
Dean Ho

17:40 Updates on the I3LUNG Horizon Europe Project
Leonardo Provenzano

17:50 Patients Decision Aid using AI tools
Dario Monzani

18:00 Discussion

session 6

AWARDS (NO CME SESSION)
Chairs: **Giuseppe Viscardi, Alessandro De Toma, Roberto Ferrara**

18.10 Introduction

18:15 Mini oral
Speaker 1

18:20 Mini oral
Speaker 2

18:25 Best poster award
The winner

18:30 Farewell and take-home messages
Arsela Prelaj